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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,227	12/29/2000	Joseph E. Johnson	97078CIPDIV1	5132

7590

04/29/2003

Cabot Corporation
Law Department
157 Concord Road
Billerica, MA 01821

EXAMINER

SHOSHIO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 04/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/752,227

Applicant(s)

JOHNSON ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 57-67, 70-72 and 80-86 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 57-67, 70-72, and 80-86 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. All outstanding rejections except for those described below are overcome by applicants' amendment filed 2/10/03.

The new grounds of rejection as set forth below are necessitated by applicants' amendment and thus, the following action is final.

Claim Rejections - 35 USC § 102

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 57-59, 65-67, and 86 are rejected under 35 U.S.C. 102(e) as being anticipated by Whitehouse et al. (U.S. 6,337,358).

The rejection is adequately set forth in paragraph 5 of the office action mailed 8/1/02, Paper No. 7, and is incorporated here by reference.

4. Claim 57 is rejected under 35 U.S.C. 102(b) as being anticipated by Hall et al. (U.S. 5,552,458).

The rejection is adequately set forth in paragraph 7 of the office action mailed 8/1/02, Paper No. 7, and is incorporated here by reference.

5. Claim 86 is rejected under 35 U.S.C. 102(b) as being anticipated by Lin (U.S. 5,281,261).

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Lin discloses modified pigment wherein polymer is attached to pigment through aromatic group. The polymer includes alkyl or aromatic group. There is also disclosed an ink jet ink which comprises liquid vehicle and the above modified pigment (col.6, lines 14-15, col.7, lines 40-57, and col.8, lines 47-52).

In light of the above, it is clear that Lin anticipates the present claims.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 60-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitehouse et al. (U.S. 6,337,358) in view of Belmont et al. (U.S. 5,571,311).

The rejection is adequately set forth in paragraph 9 of the office action mailed 8/1/02, Paper No. 7, and is incorporated here by reference.

8. Claims 62-64 and 70-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitehouse et al. (U.S. 6,337,358) in view of Johnson et al. (U.S. 5,837,045).

The rejection is adequately set forth in paragraph 10 of the office action mailed 8/1/02, Paper No. 7, and is incorporated here by reference.

9. Claims 80-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitehouse et al. (U.S. 6,337,308) in view of Belmont et al. (U.S. 5,571,311).

Whitehouse et al. disclose modified pigment comprising pigment having attached group of the formula $A-R^1-C-X-SFR$ where A is an aromatic or alkyl group, X is a polymer, and SFR is $O-Ar^2$ where Ar is an aromatic group. It is further disclosed that the above group can be terminated with hydrogen instead of SFR. The polymer includes that obtained from monomers such as styrene and alkyl (meth)acrylate, i.e. polymer comprises presently claimed X' group of alkyl or aromatic group, as well as polyamide, polyvinyl alcohol, and polyester. There is also disclosed an ink jet ink which comprises liquid vehicle and the above modified pigment (col.2, line 64-col.3, line 34, col.5, lines 50-51, col.6, lines 58-60, col.8, lines 11-12 and 20-24, col.11, lines 21-41, col.11, lines 53-col.12, line 21, col.12, lines 50-57, col.13, line 19, and col.15, lines 17-21).

The difference between Whitehouse et al. and the present claimed invention is the requirement in the claims of specific additional polymer.

Whitehouse et al. disclose that the ink contains other conventional additives such as binder but do not disclose any specific types of polymers utilized.

Belmont et al., which is drawn to ink jet ink, disclose the use of binder such as polyester, styrene-acrylic acid, polyester-melamine, styrene-acrylic acid-alkyl acrylate, styrene-methacrylic acid, etc. in order to hold the colorant onto paper (col.6, line 65-col.7, line 8).

In light of the motivation for using specific additional polymer disclosed by Belmont et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such polymer as the binder in the ink jet ink of Whitehouse et al., and thereby arrive at the claimed invention.

Response to Arguments

10. Applicants' arguments filed 2/10/03 have been fully considered but they are not persuasive.

Specifically, applicants' argue that:

- (a) Whitehouse et al. disclose different class of attached polymers than presently claimed.
- (b) Hall et al. do not disclose attached aromatic or alkyl group on pigment but rather discloses pigment having attached silane group.
- (c) Lin discloses different class of attached polymers than presently claimed.
- (d) There is no disclosure in Belmont et al. or Johnson et al. of pigment having attached at least one aromatic or alkyl groups wherein X is substituted with polymer.

With respect to argument (a), applicants argue that Whitehouse et al. disclose polymers obtained from free radical polymerizable monomers while the polymers of the present claims are either condensation-type polymers or are polymers formed by hydrolysis reactions.

However, it is noted that there is no requirement in the present claims regarding how the polymer is obtained. The present claims only require that the polymer is attached to the pigment not how the polymer is formed. That is, the present claims encompass polymers whether they are formed by free radical polymerization or polycondensation of hydrolysis reaction.

Further, it is noted that present claims 57 and 65 require that the polymers comprise polyelectrolyte while col.11, lines 28-29 of Whitehouse et al. disclose that the polymer is obtained from monomers such as (meth)acrylic acid which would form polyelectrolyte.

In light of the above, it is the examiner's position that Whitehouse et al. remains a relevant reference against the present claims.

With respect to argument (b), it is noted that Hall et al. disclose pigment having attached group of the formula $R^2-Si-AX$ where R^2 is a C_1-C_{10} alkyl group and X is attached to the polymeric backbone. Thus, there is an alkyl group attached to the pigment as required in the present claims. Although there is a silane group attached to the alkyl group R^2 and the polymer is attached to the pigment through the silane group, there is no requirement in the present claims that the polymer must be directly attached to the alkyl group or that the alkyl group have no other groups attached to it.

With respect to argument (c), applicants argue that Lin discloses polymers obtained from free radical polymerizable monomers while the polymers of the present claims are either condensation-type polymers or are polymers formed by hydrolysis reactions. However, it is noted that there is no requirement in the present claims regarding how the polymer is obtained. The present claims only require that the polymer is attached to the pigment not how the polymer is formed. That is, the present claims encompass polymers whether they are formed by free radical polymerization or polycondensation of hydrolysis reaction. While it is agreed that Lin do not disclose the same types of polymers attached to the pigment as utilized in the present invention, it is noted that Lin is only used to reject present claim 86 which does not require the use of any specific type of polymer.

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With respect to argument (d), it is agreed that there is no disclosure in either Belmont et al. or Johnson et al. of pigment having attached at least one aromatic or alkyl group wherein X is substituted with polymer. However, it is noted that Belmont et al. and Johnson et al. are used as teaching references, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these references teach a certain concept, namely, attaching functional groups to alkyl or aromatic group that is attached to pigment in order increase the dispersability of the pigment(Belmont et al.) and attaching chemical group to pigment in order to produce pigment which is more dispersible and has greater stability, and in combination with the primary reference, disclose the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

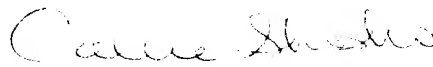
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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Callie E. Shosho
Examiner
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CS
April 26, 2003